

The statement as to novelty was positive with respect to Claims 1 - 23 and negative with respect to none. The statement as to inventive step was positive with respect to none and negative with respect to Claims 1 - 23. The statement as to Industrial Applicability was positive with respect to Claims 1 - 23 and negative with respect to none.

The statement that Claims 1 - 4, 6 and 8 - 12 lack inventive step under PCT Article 33(3) as being obvious over Hibino et al. in view of Rosenberry, Jr., is respectfully traversed.

Hibino et al. describes a squirrel cage rotor including a rotor core formed by laminating a plurality of steel sheets. A first set of laminations CA are inclined to the left, and a second set of laminations CB are inclined to the right. The steel sheets have punched portions for forming equally spaced slots along the outer circumference. The steel sheets are laminated such that the punched slots are skewed and the slots axially pass through the rotor core.

Rosenberry, Jr., describes a squirrel cage induction motor rotor including cast rotor having slots disposed in a pair of concentric circular planes wherein the slots in each plane are spaced and preferably positioned in radial alignment with one another. The inner slot nearest the rotor shaft is designed to receive cast conductors while the outer slot is kept open and free of conductive material. The arrangement of slots is such that current is permitted to flow only in the inner slots during all conditions of machine operation while the outer slot provides reactance for limiting the starting current for the machine.

Claim 1 recites "a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of said rotor laminations comprising a plurality of slots having skew portions extending in a second direction, and a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one of said skew portions."

Hibino et al. in view of Rosenberry, Jr., do not teach nor suggest a rotor core having a plurality of notches substantially aligned and coextensive with at least one skew

portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least one skew portion. Therefore, Applicants respectfully submit Claim 1 meets the criteria for inventive step over Hibino et al. in view of Rosenberry, Jr.

Claims 2 - 4, 6, and 8 - 12 depend, directly or indirectly, from independent Claim 1. When the recitations of dependent Claims 2 - 4, 6, and 8 - 12 are considered in combination with the recitations of independent Claim 1, Applicants respectfully submit that Claims 2 - 4, 6, and 8 - 12 likewise meet the criteria for inventive step over Hibino et al. in view of Rosenberry, Jr.

For the reasons set forth above, Applicants respectfully request that the statement that Claims 1 - 4, 6 and 8 - 12 lack inventive step under PCT Article 33(3) over Hibino et al. in view of Rosenberry, Jr., be withdrawn.

The statement that Claims 1, 5 and 13 lack inventive step under PCT Article 33(3) as being obvious over Hibino et al. in view of Prymak is respectfully traversed.

Hibino et al. has been discussed above. Prymak describes a laminated helical rotor core defining poles and axially disposed tooth portions that overlap. Each tooth portion has a primary skew because of overlap in lamination and a secondary skew caused by the tooth portions themselves. The overlap in laminations produces a helical rotor cage.

Claim 1 recites "a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of said rotor laminations comprising a plurality of slots having skew portions extending in a second direction, and a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one of said skew portions."

Hibino et al. in view of Prymak do not teach nor suggest a plurality of notches substantially aligned and coextensive with at least one skew portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least

one skew portion. Therefore, Applicants respectfully submit that Claim 1 meets the criteria for inventive step over Hibino et al. in view of Pryjmak.

Claims 5 and 13 depend from independent Claim 1. When the recitations of dependent Claims 5 and 13 are considered in combination with the recitations of independent Claim 1, Applicants respectfully submit that Claims 5 and 13 likewise meets the criteria for inventive step over Hibino et al. in view of Pryjmak.

For the reasons set forth above, Applicants respectfully request that the statement that Claims 1, 5 and 13 lack inventive step under PCT Article 33(3) over Hibino et al. in view of Pryjmak be withdrawn.

The statement that Claims 1 and 7 lack inventive step under PCT Article 33(3) as being obvious over Hibino et al. in view of Endress is respectfully traversed.

Hibino et al. has been discussed above. Endress describes an induction motor rotor with a squirrel cage winding. The rotor is formed of thin magnetic steel punchings identical in form and shape. The slots in the punchings include projections and the punchings are arranged in groups in stack formation with the projections being grouped to provide a tortuous path for reception of molten metal.

Claim 1 recites "a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of said rotor laminations comprising a plurality of slots having skew portions extending in a second direction, and a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one of said skew portions."

Hibino et al. in view of Endress do not teach or suggest a rotor core having a plurality of notches substantially aligned and coextensive with at least one skew portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least one skew portion. Therefore, Applicants respectfully submit that Claim 1 meets the criteria for inventive step over Hibino et al. in view of Endress.

Claim 7 depends from independent Claim 1. When the recitations of dependent Claim 7 are considered in combination with the recitations of independent Claim 1, Applicants respectfully submit that Claim 7 likewise meets the criteria for inventive step over Hibino et al. in view of Endress.

For the reasons set forth above, Applicants respectfully request that the statement that Claims 1 and 7 lack inventive step under PCT Article 33(3) over Hibino et al. in view of Endress be withdrawn.

The statement that Claims 14, 15 and 17 - 23 lack inventive step under PCT Article 33(3) as being obvious over Hibino et al. in view of Kliman et al. is respectfully traversed.

Hibino et al. has been discussed above. Kliman et al. describes a rotor for use in a start permanent magnet motor including a rotor cage that extends through the rotor core, and a layer of permanent magnetic material partially coating the rotor core.

Claim 14 recites "a rotor core comprising a plurality of rotor laminations, each of said laminations having an outer periphery, a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of said rotor laminations comprising a plurality of slots having skew portions extending in a second direction, a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one said skew portions ... [and] a plurality of permanent magnets located in said lamination notches."

Hibino et al. in view of Kliman et al. do not teach or suggest a rotor core having a plurality of notches substantially aligned and coextensive with at least one skew portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least one skew portion. Therefore, Applicants respectfully submit that Claim 14 meets the criteria for inventive step over Hibino et al. in view of Kliman et al.

Claims 15 and 17 - 20 depend from independent Claim 14. For at least the reasons set forth above with respect to the patentability of independent Claim 14, when the recitations of dependent Claims 15 and 17 - 20 considered in combination with the recitations of independent Claim 14, Applicants respectfully submit that Claims 15 and 17 - 20 likewise meets the criteria for inventive step over Hibino et al. in view of Kliman et al.

Claim 21 recites "[a]n electric motor, comprising ... a rotor core comprising a plurality of rotor laminations, each of said laminations having an outer periphery, a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of rotor laminations comprising a plurality of slots having skew portions extending in a second direction, a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one of said skew portions...and a plurality of permanent magnets located in said lamination notches...."

Hibino et al. in view of Kliman et al. do not suggest an electric motor including a rotor core containing a plurality of notches substantially aligned and coextensive with at least one skew portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least one skew portion. Therefore, Applicants respectfully submit that Claim 21 meets the criteria for inventive step over Hibino et al. in view of Kliman et al.

Claims 22 and 23 depend from independent Claim 21. For at least the reasons set forth above with respect to the patentability of independent Claim 21, when the recitations of dependent Claims 22 and 23 considered in combination with the recitations of independent Claim 21, Applicants respectfully submit that Claims 22 and 23 likewise meets the criteria for inventive step over Hibino et al. in view of Kliman et al.

For the reasons set forth above, Applicants respectfully request that the statement that Claims 14, 15 and 17 - 23 lack inventive step under PCT Article 33(3) over Hibino et al. in view of Kliman et al. be withdrawn.

The statement that Claim 16 lacks an inventive step under PCT Article 33(3) as being obvious over Hibino et al. in view of Kliman et al. and further in view of Pryjmak is respectfully traversed.

Hibino et al., Kliman et al. and Pryjmak have been discussed above.

Claim 14 recites "a rotor core comprising a plurality of rotor laminations, each of said laminations having an outer periphery, a first set of rotor laminations comprising a plurality of slots having skew portions extending in a first direction, a second set of said rotor laminations comprising a plurality of slots having skew portions extending in a second direction, a plurality of notches having an open end at said outer periphery and substantially aligned and coextensive with at least one said skew portions ... [and] a plurality of permanent magnets located in said lamination notches."

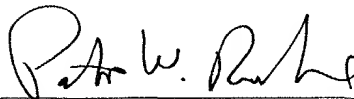
Hibino et al. in view of Kliman et al. and further in view of Pryjmak do not teach nor suggest a rotor core with a plurality of notches substantially aligned and coextensive with at least one skew portion wherein the notches have an open end at the outer periphery and are substantially aligned and coextensive with at least one skew portion. Therefore, Applicants respectfully submit Claim 14 meets the criteria for inventive step over Hibino et al. in view of Kliman et al. and further in view of Pryjmak.

Claim 16 depends from independent Claim 14. For at least the reasons set forth above with respect to the patentability of independent Claim 14, when the recitations of Claim 16 are considered in combination with the recitations of independent Claim 14, Applicants respectfully submit that Claim 16 likewise meets the criteria for inventive step over Hibino et al. in view of Kliman et al. and further in view of Pryjmak.

For the reasons set forth above, Applicants respectfully request that the statement that Claim 16 lacks an inventive step under PCT Article 33(3) over Hibino et al. in view of Kliman et al. and further in view of Pryjmak be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to meet the criteria for novelty, inventive step and industrial applicability under PCT Article 33(2)-(4). Favorable action is respectfully solicited.

Respectfully Submitted,



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